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USSR PROGRESS IN THE FIELD OF ANTIBIOTICS DURING 1951-1953

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A. I. Nesterov,
 Academician-Sect
 Acad Med Sci
 USSR

[The following excerpts are taken from a report presented by Nesterov at the 8th Session of the Academy of Medical Sciences USSR, Moscow, 8-10 December 1953.]

Recently Soviet medicine has been enriched by a number of preparations which make it possible to combat actively many infectious diseases. With respect to the control of dysentery one must regard as very promising the application of levomycetin, synthomycin, biomycin, and particularly a combination of synthomycin and streptomycin with Troitskiy's vaccine. The effectiveness of levomycetin and biomycin in rickettsioses has been established; in brucellosis, levomycetin and biomycin are effective; in pneumonia, particularly pneumonia of children, levomycetin and penicillin combined with ekmolin exert an effective action; and in acute catarrhs of the upper respiratory tract and in scarlet fever, penicillin combined with ekmolin is effective. At the Laboratory of Antibiotics the new original domestic antibiotic albomycin has been obtained. The production of albomycin was organized in 1952. The application of albomycin in the treatment of pneumonia and septic diseases of children, including those produced by penicillin-resistant forms of bacteria, assures considerable reduction of fatalities resulting from these diseases among young children.

Under the direction of Z. V. Yermol'yeva, Corresponding Member of the Academy of Medical Sciences USSR, a new USSR antibiotic, ekmolin, was created. This antibiotic proved to be very effective when applied against a number of infectious diseases.

The antibiotic biomycin, which had been obtained by the All-Union Scientific Research Institute of Antibiotics, was recommended by the Scientific Counsel of the Ministry of Public Health USSR as a very effective drug for the treatment of brucellosis, typhus, dysentery, pneumonia, and peritonitis.

A group of workers under the direction of Kh. Kh. Planel'es obtained a new antibiotic which exhibits a low toxicity and is active against intestinal infections. Data pertaining to the experimental and clinical investigation of phytoncides deserve the attention of biologists and clinicians. The Soviet scientists V. L. Troitskiy, Corresponding Member of the Academy of Medical Sciences USSR, and Kh. Kh. Planel'es, who applied the advanced materialistic teaching of Michurin, proved in contradistinction to foreign scientists that the resistance of microorganisms to drugs is the result of the direct action of antibiotics upon microorganisms, and that this resistance is then transmitted hereditarily.

At the same time one must note that the scope of the research work and the practical significance of this work, as far as the creation of new and active antibiotics is concerned, does not satisfy by far the demands of practical medicine. One must point out the inadequate extent of work aiming at the development of new antibiotics and at the creation of new antibiotic preparations, which are urgently needed.

One of the principal causes of this lag is the shortage of installations and apparatus for the production of new antibiotic preparations on a semi-industrial scale. One must also recognize that there is a very limited amount of investigations on the mechanism of the action of antibiotics within the animal organism.

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Investigations on phenomena connected with the application of antibiotics and chemotherapeutic preparations are also limited in scope. For that reason work problems connected with the improvement of the quality of the drugs being supplied is likewise conducted to an inadequate extent. One cannot regard as sufficient the amount of investigations on the resistance of microorganisms to drugs and on measures of combating this resistance in connection with applications in practical medicine.

In view of this the scientific and medical community will receive with satisfaction the decision to create a new and independent institute of antibiotics within the system of the Academy of Medical Sciences USSR.

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